

CUSTOMER NO.: 24498**Serial No. 09/849,570**

Reply to Office Action dated: 11/02/05

Response dated: 02/15/06

**PATENT
PF000039****REMARKS**

In the Final Office Action, the Examiner noted that claims 1-10 are pending in the application. The Examiner further noted that claims 7-9 are objected to and that claims 1-6 and 10 are rejected. By this response claim 1 is amended, claim 3 is cancelled and all other claims continue unamended.

In view of the amendments presented above and the following discussion, the Applicant respectfully submits that none of the claims are anticipated under the provisions of 35 U.S.C. § 102. Thus the Applicant believes that all of these claims and the application are now in allowable form.

Rejections**A. 35 U.S.C. § 102**

The Examiner rejected claims 1-6 and 10 under 35 U.S.C. § 102(e) as being anticipated by Matsumura et al. (U.S. Patent No. 6,751,400 B1, hereinafter "Matsumura"). The rejection is respectfully traversed.

Matsumura teaches in column 8, lines 38-39 that "when the display of the picture B13 has come to a close and a vacant frame memory is produced, the picture P5 is decoded and saved in the frame memory". Thus indeed, it is mentioned that a picture is decoded when the buffer is vacant and when the display is close. However, the applicant maintains that there is no step of "establishing a decoding order of decoding pictures" as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1. However, in order to, further distinguish the invention of the Applicant, at least with respect to claim 1, from the invention of Matsumura, the features of the Applicant's original claim 3 have been added to claim 1.

The Applicant respectfully submits that the limitations of the Applicant's claim 3 are absolutely not taught or disclosed in Matsumura. More specifically, Matsumura discloses a device dedicated to reverse playback. Thus, all pictures will be displayed and there is no need to have a decoding order. That is, in Matsumura all the pictures are displayed and thus all pictures are decoded also. The invention of the Applicant is not only directed to reverse playback. Instead,

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the invention of the Applicant is suitable for all Trickplay modes. More specifically, the first step of the Applicant's claim 1 recites "establishing an order of decoding pictures". The decoding order of the invention of the Applicant is based on the type of Trickplay mode and also on dependencies between the pictures.

Matsumura also discloses a method where the coding of an image is dependant on the coding of other images (for instance MPEG-2). However, as all the images are displayed in Matsumura, the decoding is simple and there is no order to establish. When only some of the pictures are displayed as in the invention of the Applicant, it becomes critical to get a decoding order according to the display order. Not all the images need to be decoded, but only the images necessary for the decoding of the images to be displayed.

In addition, the Examiner alleged that claim 3 is also anticipated by Matsumura. However, the Applicant respectfully submits that in Matsumura, there is no step of determining a list of the pictures to be displayed as all the pictures are displayed. In addition, regarding the chains of predictors of the Applicant's amended claim 1, it is much more than I, B or P types. It is exactly which picture depends on which other picture. There is absolutely no teaching or disclosure in Matsumura for "recursively determining chains of predictors for said pictures to be displayed" as taught and claimed by at least the Applicant's claim 1, as in Matsumura only a reverse trickplay is considered. In the invention of the Applicant, however, as described on at least page 11 lines 1-2, it is clearly mentioned that, for fast operation, pictures must be skipped. As such, Next(N) returns IDs of non -consecutive pictures. As such, it is necessary to have a step of establishing an order of decoding pictures when a device is capable of various Trickplay modes as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1.

More specifically and as previously described, in support of at least claim 1, the Applicant in the specification specifically recites:

"If the target picture (PicID) does not yet exist in the reconstruction buffers, then it needs to be decoded. If the picture identified by PicID is of 'P' or 'B' type, then its decoding may require the presence of forward and backward predictors. This information is available in the trickmode tables.

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The rule that gives the predictors on which a picture to be decoded depends on is simple: going through the stream backwards (i.e. towards video access units previously recorded), the first 'P' type or 'I' type picture encountered is the predictor for the current picture. This picture can be found using the trickmode information. This predictor is called 'NearestID' in figure 5.

If the picture identified by PicID is a 'P' type picture, NearestID is a Forward Predictor in the sense that the NearestID picture is located, in the time scale and display order, before the picture identified by PicID.

If the picture identified by PicID is a 'B' type picture, NearestID is a Backward Predictor. Then the Forward Predictor is found by looking further backwards for the next 'I' or 'P' type picture. This Forward predictor is called 'FarthestID' in figure 5.

In order to decode a picture, if the reconstructed predictors do not exist in the reconstruction buffers, they have to be built. In this case, the DecodePicture command is recursively repeated for these pictures.

Preceding the reconstruction of a B picture, up to two predictors may have to be decoded, unless already decoded and present in the reconstruction buffer. As can be seen in figure 5, FarthestID is decoded first, followed by NearestID. Since NearestID may also depend on FarthestID, the latter is decoded first: the process is thus optimized and a double decoding of the picture corresponding to FarthestID is avoided. For example, if a B picture is predicted from two P pictures, the second P picture in time depends on the first P picture.

Once FarthestID is built into the reconstruction buffer, the buffer is locked to prevent the reconstruction process of NearestID to overwrite FarthestID, which is kept as a temporary result." (See Specification, page 11, line 30 through page 12, line 25).

As clearly evident from at least the portion of the Applicant's disclosure presented above, in the Applicant's invention it is explained in which order the images are selected to be decoded. In various embodiment of the Applicant's invention and as described above, the images are decoded in an order depending on their types "I, P or B" as their decoding depends on the other images for B or P types and thus the decoding is done according to this type. That is, the Applicant teaches and claims efficient decoding which depends on the inventive order described in the Applicant's Specification and not on a sequential order.

Matsumura, however, teaches away from the invention of the Applicant. That is, in contrast to the invention of the Applicant, Matsumura teaches a process for decoding compressed video pictures in a video decoding device comprising a random source of coded video pictures, a video decoder and a plurality of reconstruction buffers for storing decoded pictures. The method of Matsumura,

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however, does not teach, suggest or anticipate a step of establishing an order of decoding the pictures as taught in the Applicant's Specification and as claimed by at least the Applicant's claim 1. Instead in the passage cited by the Examiner (column 8, lines 9-23), Matsumura specifically teaches that the pictures are sequentially decoded and stored in the frame memories. It is clear that there is no establishment of an order of decoding the images as taught in the Applicant's Specification and as claimed by at least the Applicant's claim 1. In contrast to the Applicant's invention, the images in Matsumura are decoded in a conventional order (i.e., a sequential order). That is, in Matsumura it is clearly mentioned that the images are decoded sequentially, not taking into account the predictors and thus the type of the image to be decoded. The images are sequentially decoded and stored in the buffer. Thus a higher number of buffers is required, five (5) in the cited example of Matsumura, whereas in the invention of the Applicant because of the claimed decoding order, only three (3) reconstruction buffers are required.

As such and for at least the reasons described above and specifically because Matsumura fails to teach, suggest or anticipate at least "establishing an order of decoding pictures" or "recursively determining chains of predictors for said pictures to be displayed" as taught in the Applicant's Specification and claimed by at least the Applicant's amended claim 1, the Applicant respectfully submits that Matsumura fails to teach, suggest or disclose at least each and every element of the Applicant's claimed invention, arranged as in at least the Applicant's claim 1 as required for anticipation. Therefore, the Applicant respectfully submits that the teachings and disclosure of Matsumura do not anticipate the Applicant's invention, at least with respect to independent claim 1.

Therefore, the Applicant submits that for at least the reasons recited above independent claim 1 is not anticipated by the teachings of Matsumura and, as such, fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Likewise, Independent claim 10 recites similar relevant features as recited in the Applicant's Independent claim 1. More specifically, claim 10 recites "means for selecting pictures to be decoded" and "means for monitoring the availability for write access of reconstruction buffers". In claim 10, the pictures to be decoded are

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selected by the means in the inventive order taught in the Applicant's Specification and the pictures are decoded upon availability of the reconstruction buffers. As described above, there is absolutely no teaching, suggestion or disclosure in Matsumura for "means for selecting pictures to be decoded" and "means for monitoring the availability for write access of reconstruction buffers" as claimed by the Applicant's claim 10. As such, the Applicant submits that for at least the reasons recited above independent claim 10 is also not anticipated by the teachings of Matsumura and also fully satisfies the requirements of 35 U.S.C. § 102 and is patentable thereunder.

Furthermore, dependent claims 2-9, depend either directly or indirectly from independent claim 1 and recite additional features therefor. As such and for at least the reasons set forth herein, the Applicant submits that dependent claims 2-9 are also not anticipated by the teachings of Matsumura. Therefore the Applicant submits that dependent claims 2-9 also fully satisfy the requirements of 35 U.S.C. § 102 and are patentable thereunder.

The Applicant reserves the right to establish the patentability of each of the claims individually in subsequent prosecution.

Conclusion

The Applicant would like to thank the Examiner for the indication of allowable subject matter, however, the Applicant submits that all of the Applicant's claims herein are patentable over the art cited by the Examiner. The Applicant, however, agrees with the Examiner that claims 7-9 are allowable over the cited prior art if written in independent form and including all of the limitation of the base claims and any intervening claims.

Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion, it is respectfully requested that the Examiner telephone the undersigned.

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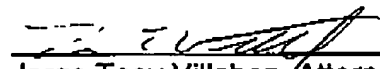
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No fee is believed due. However, if a fee is due, please charge the additional fee to Deposit Account No. 07-0832.

Respectfully submitted,

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